



PATENT APPLICATION  
PO-7946  
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICATION OF	)	
JAMES Y. J. CHUNG ET AL	)	GROUP NO.: 1714
SERIAL NUMBER: 10/667,955	)	
FILED: SEPTEMBER 22, 2003	)	EXAMINER: P. SZEKELY
TITLE: POLYCARBONATE COMPOSITION	)	

**DECLARATION UNDER 37 C.F.R. §1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

I, James Y. J. Chung, a citizen of the United States hereby declare that:

I studied Chemistry at the University of Tennessee and was awarded my Ph. D. in 1972; and

I am currently Principal Scientist at Bayer MaterialScience, the assignee of the captioned patent application; and

I am a named inventor in the captioned patent application.

An embodiment of my invention is directed to a composition that contains polycarbonate, clay and carboxylic acid; the clay being modified by quaternary ammonium salt.

I have read U.S. Patent 6,610,770 ("Ross") a document cited in rejecting the claims in the prosecution of the parent patent application and note the following in its regard:

Ross disclosed a composition that includes a polymer system and a "smectite clay modified with an organic chemical composition" (column 4, lines 3-4).

The modified clay is disclosed as an organic chemical/clay mixture prepared by the reaction of smectite clay and one or more quaternary ammonium compounds and/or optionally one or more organic materials (Ross - column 4, lines 5-8)

Ross' organic material is "capable of reacting with component (b) of this invention and for intercalation with component (a)" -(column 8, lines 49 et seq.)- component (b) refers to quaternary ammonium compound and component (a) refers to clay.

In view of the above, I conclude that Ross does not describe the carboxylic acid and/or the quaternary ammonium salt entailed in my invention because:

I. The claimed carboxylic acid and quaternary ammonium salt do not react one with the other, and

II. The claimed carboxylic acid is incapable of intercalation with the claimed clay.

I. The quaternary ammonium salt of my invention is by definition "an organic nitrogen compound in which the molecular structure includes a central nitrogen atom joined to four organic groups as well as to an acid radical" (emphasis added, see entry in The Condensed Chemical Dictionary, Ninth Edition revised by Gessner G. Hawley – pages 738-739 enclosed)

Accordingly, I can confidently state that based on its structure the quaternary ammonium salt of my invention is incapable of reacting with the carboxylic acid of my invention.

II. To determine the capability of carboxylic acid for intercalating clay, I prepared the four compositions as described below and sent these to Professor Manias at Pennsylvania State University for determining the degree of intercalation (quantifiable as d-spacing) of the included clay.

These compositions are described as follows:

Example.	B	C	D	E
Polycarbonate	97.5	95.0	97.25	94.5
Clay	2.50	5.00	2.5	5.0
Citric Acid	0.0	0.0	0.25	0.50

Based on findings by Dr. Manias (see Manias Declaration submitted herewith) I can confidently state that the acid entailed in my invention does intercalate the clay included in the inventive composition.

Based on I and II above I conclude that Ross does not describe the composition of my invention.

The undersigned Declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States code and that such willful false statements may jeopardize the validity of pending Application Serial Number 10,667,955 or any patent issuing thereon.

Signed at Pittsburgh this 3rd day of May,  
2006.

James Y.J. Chung  
James Y.J. Chung

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